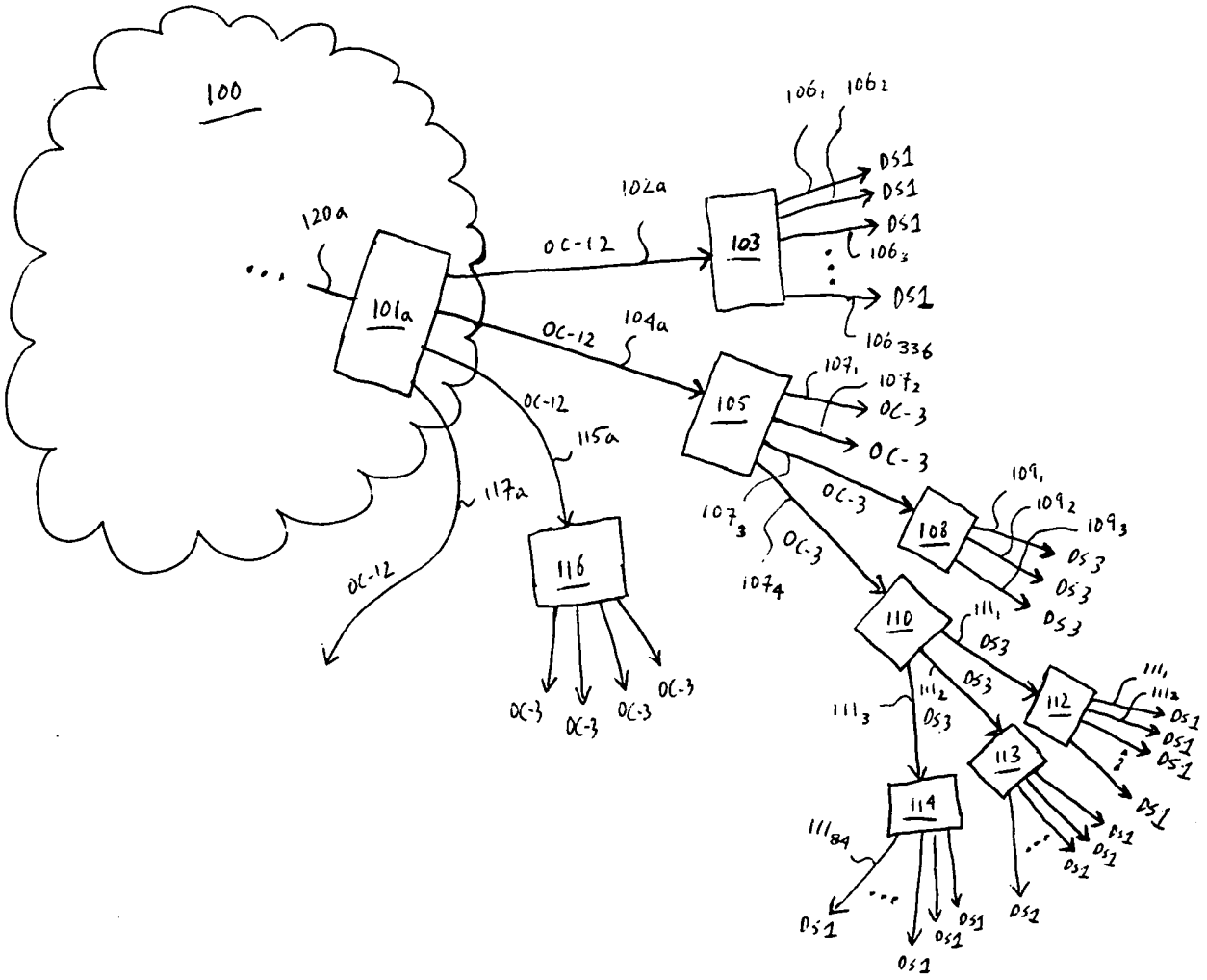

100
120a
101a
102a
OC-12
103
106₁ 106₂
DS1
DS1
DS1
106₃
DS1
106₃₃₆
104a
OC-12
105
107₁
107₂
OC-3
OC-3
OC-12
115a
117a
OC-12
116
OC-3
OC-3
OC-3
OC-3
107₃
OC-3
107₄
OC-3
108
109₁
109₂
109₃
DS3
DS3
DS3
110
111₁
DS3
111₂
DS3
111₃
DS3
112
111₃
111₄
DS1
DS1
DS1
DS1
113
DS1
DS1
DS1
DS1
114
111₈₄
DS1
DS1
DS1
DS1

FIGURE 1A

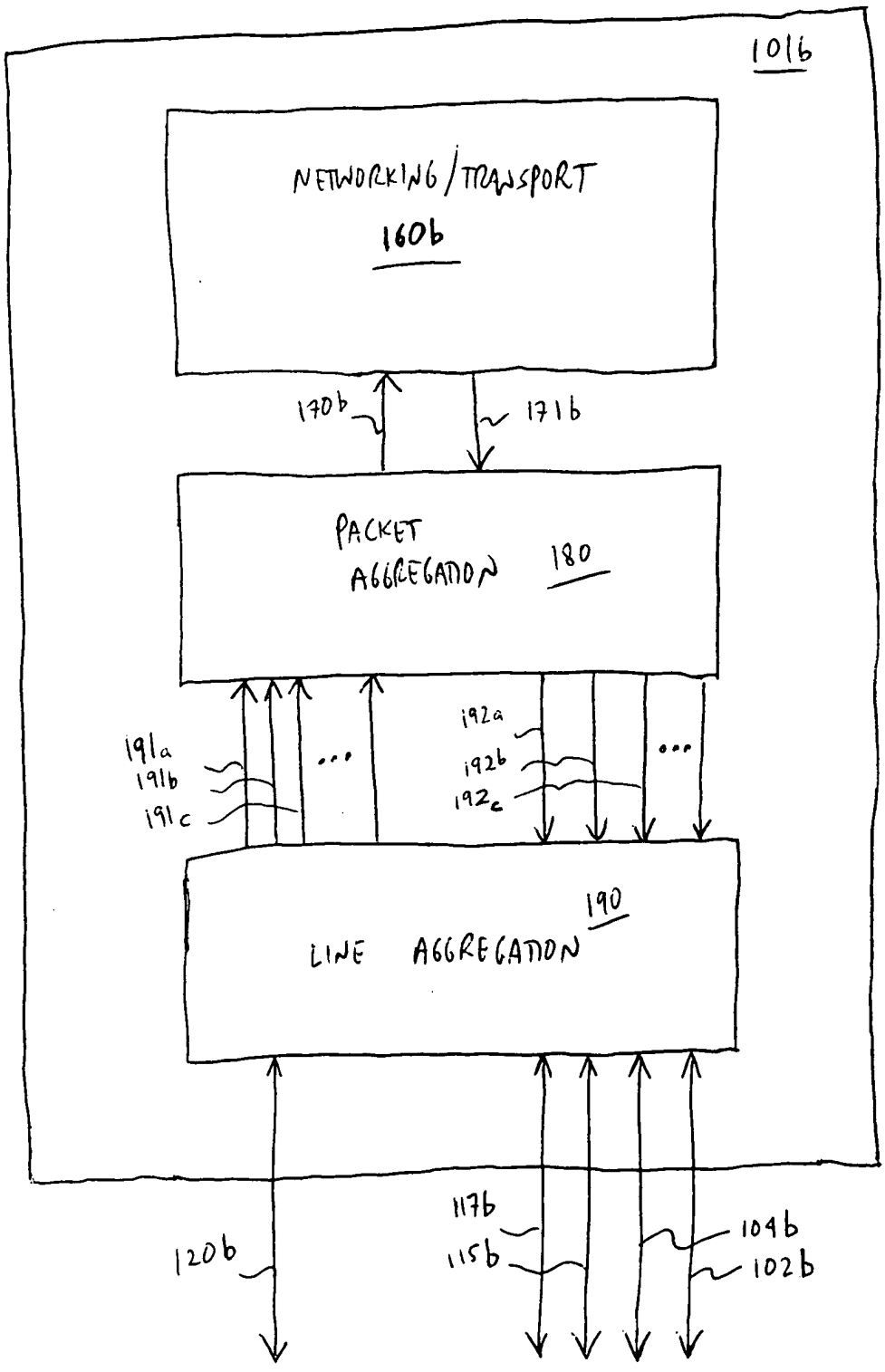

101b
NETWORKING / TRANSPORT
160b
170b
171b
PACKET
AGGREGATION 180
191a
191b
191c
192a
192b
192c
LINE AGGREGATION 190
120b
117b
115b
104b
102b

FIGURE 1B

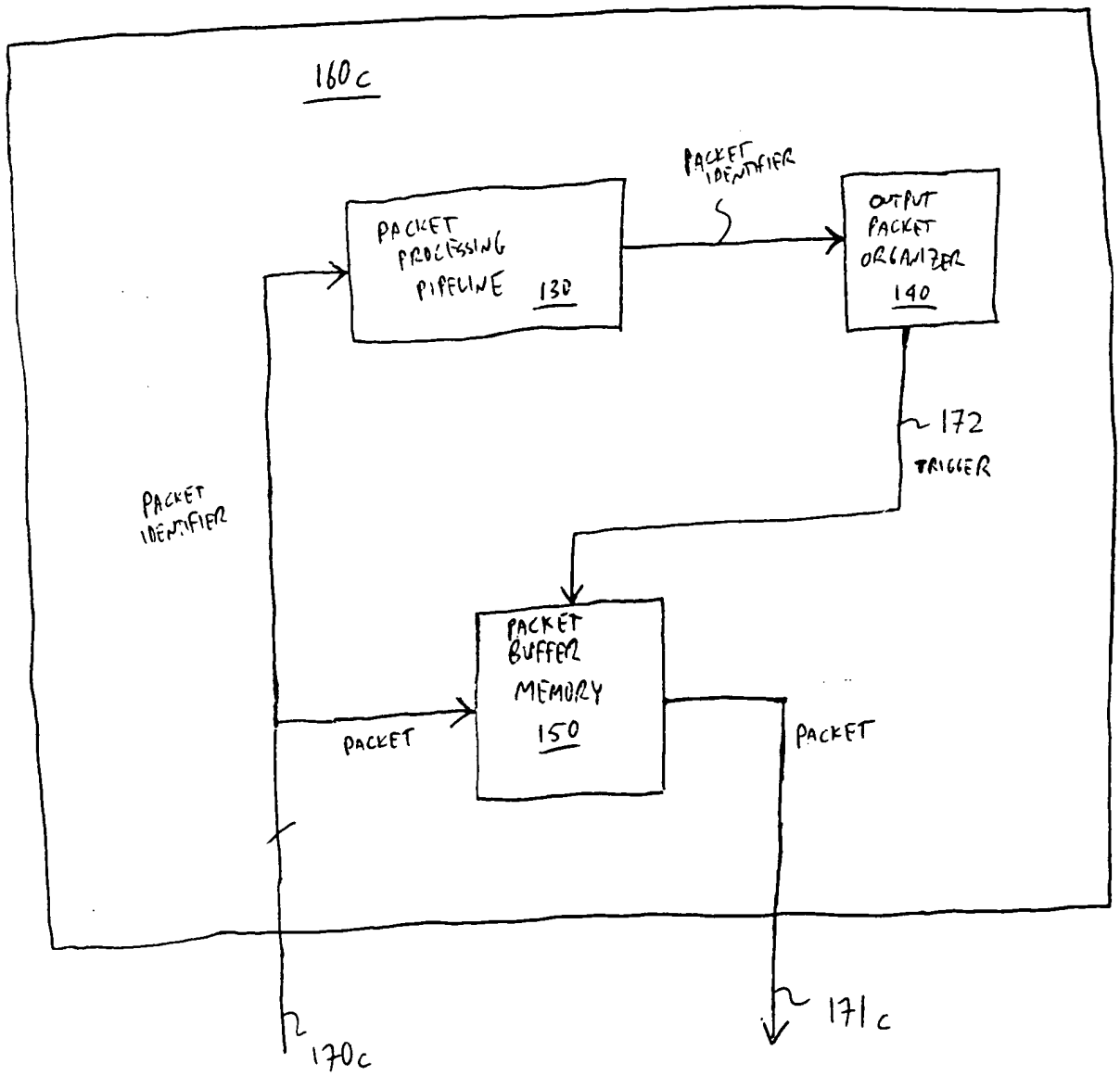

160c
PACKET IDENTIFIER
PACKET PROCESSING PIPELINE 130
OUTPUT PACKET ORGANIZER 140
172
TRIGGER
PACKET IDENTIFIER
PACKET BUFFER MEMORY 150
PACKET
PACKET
170c
171c

FIGURE 1C

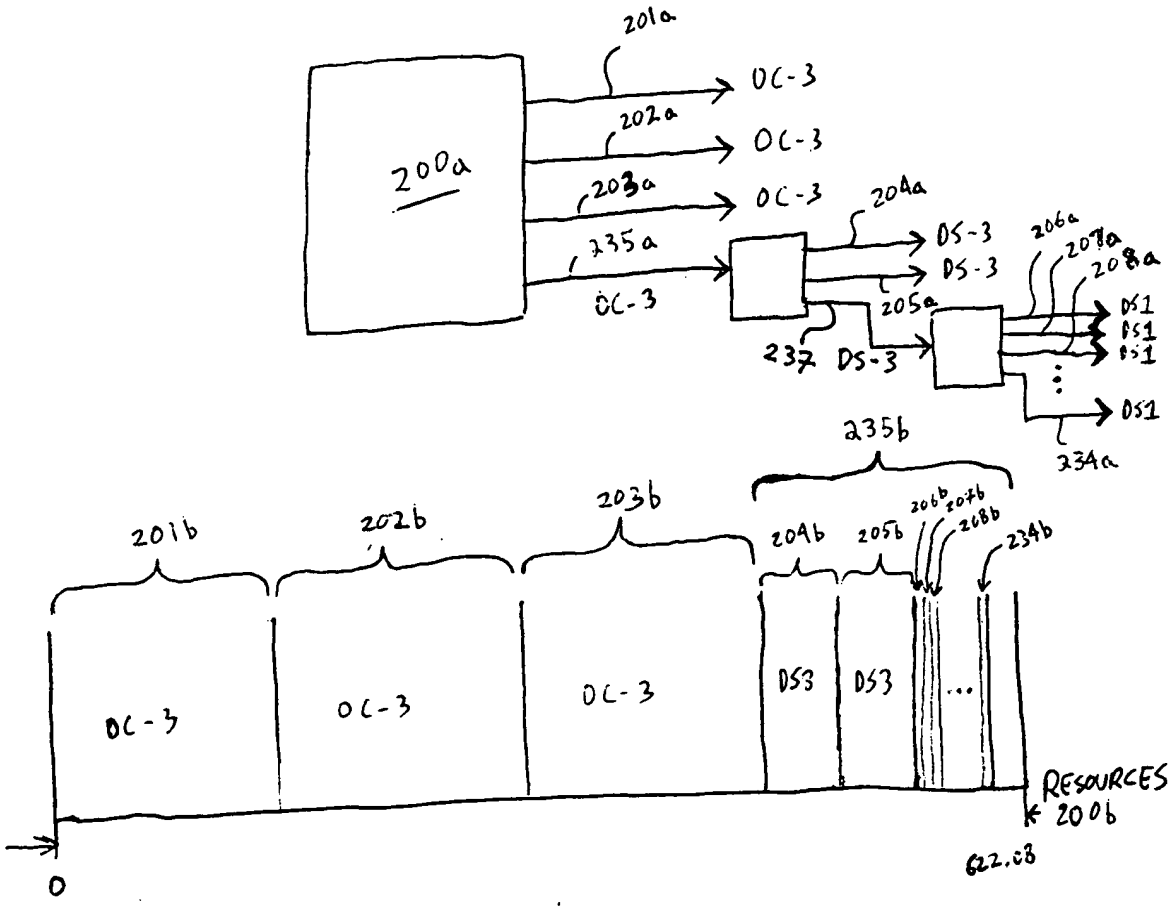

200a
201a
OC-3
202a
OC-3
203a
OC-3
204a
DS-3
206a
207a
208a
DS-3
235a
OC-3
205a
DS1
DS1
DS1
237
DS-3
234a
235b
201b
202b
203b
204b
205b
206b
207b
208b
234b
OC-3
OC-3
OC-3
DS3
DS3
RESOURCES
200b
0
622.08
Mb/s

FIGURE 2

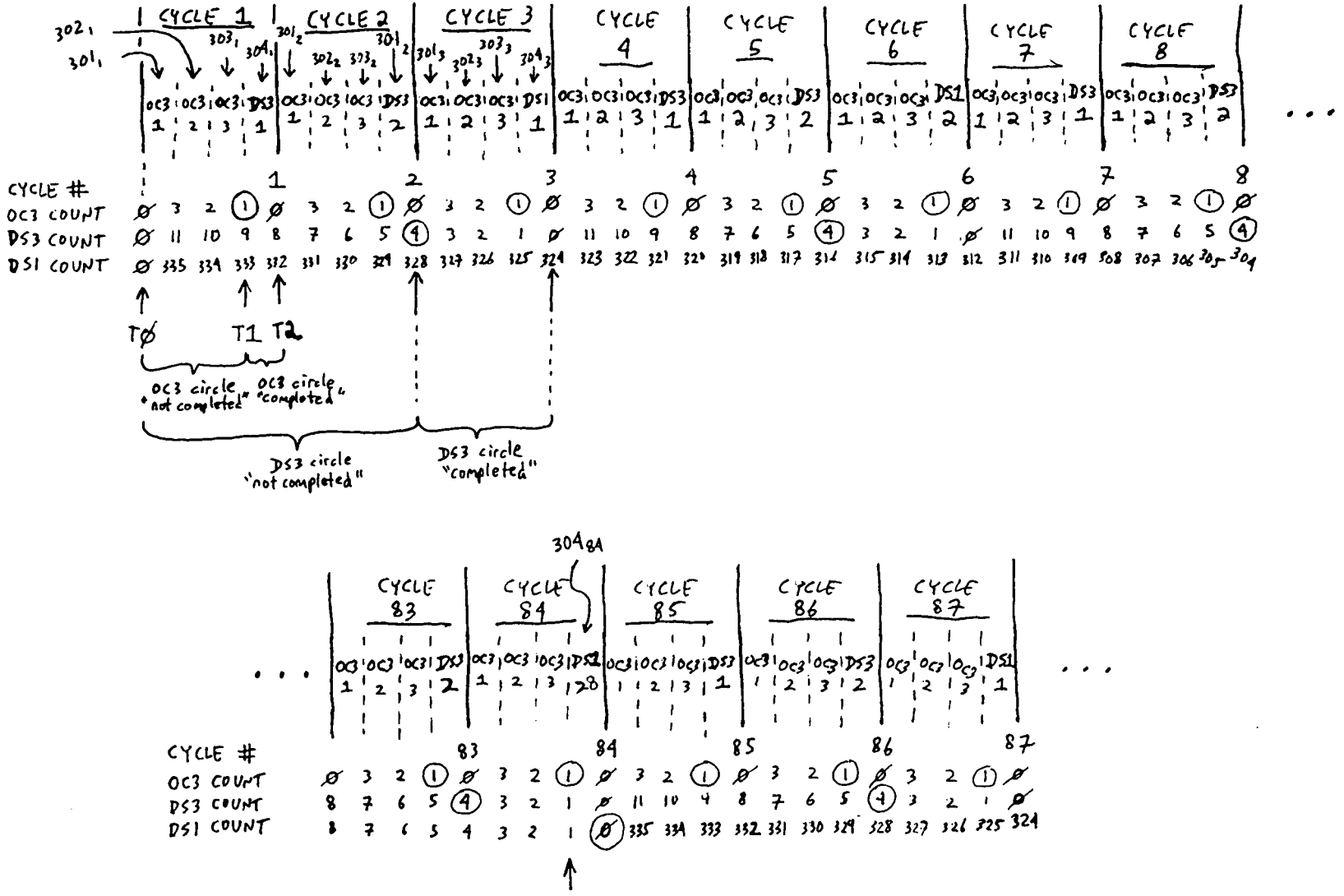

CYCLE 1
CYCLE 2
CYCLE 3
CYCLE 4
CYCLE 5
CYCLE 6
CYCLE 7
CYCLE 8
CYCLE 83
CYCLE 84
CYCLE 85
CYCLE 86
CYCLE 87
CYCLE #
OC3 COUNT
DS3 COUNT
DS1 COUNT
T0
T1
T2
OC3 circle "not completed"
OC3 circle "completed"
DS3 circle "not completed"
DS3 circle "completed"
(x) = done bit received

FIGURE 3

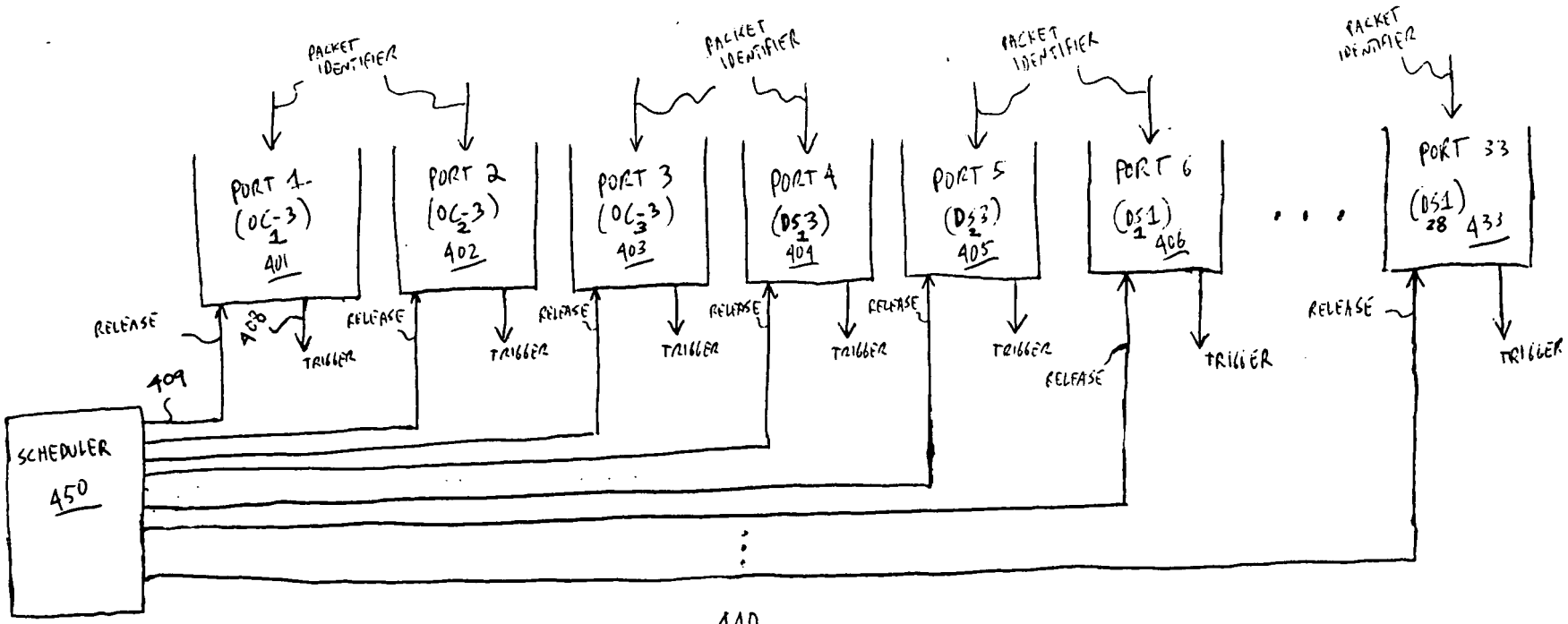

PACKET IDENTIFIER
PORT 1 (OC-3) 401
PORT 2 (OC-3) 402
PORT 3 (OC-3) 403
PORT 4 (DS3) 404
PORT 5 (DS3) 405
PORT 6 (DS1) 406
PORT 33 (DS1) 433
RELEASE
TRIGGER
SCHEDULER 450
409
440

FIGURE 4

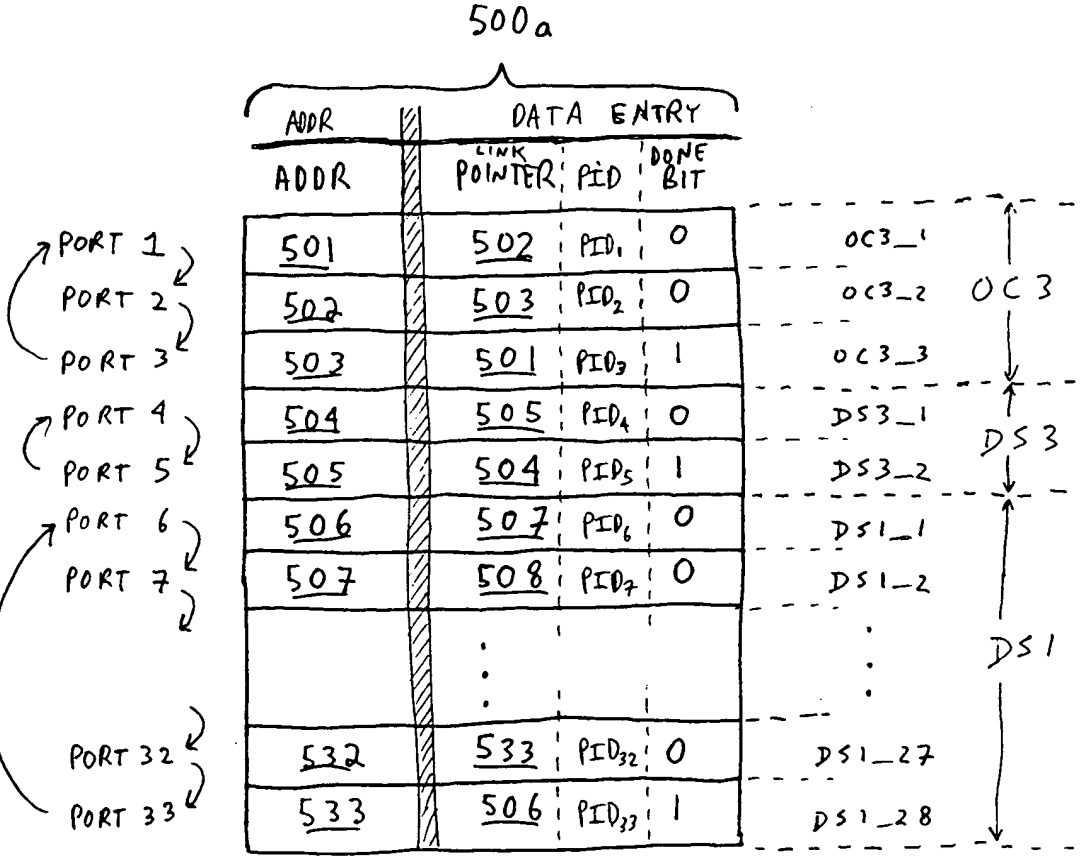

500a
ADDR
DATA ENTRY
ADDR
LINK POINTER
PID
DONE BIT
PORT 1
PORT 2
PORT 3
PORT 4
PORT 5
PORT 6
PORT 7
PORT 32
PORT 33
501
502
503
504
505
506
507
532
533
502
503
501
505
504
507
508
533
506
PID1
PID2
PID3
PID4
PID5
PID6
PID7
PID32
PID33
0
0
1
0
1
0
0
0
1
OC3_1
OC3_2
OC3_3
DS3_1
DS3_2
DS1_1
DS1_2
DS1_27
DS1_28
OC3
DS3
DS1

FIG. 5A

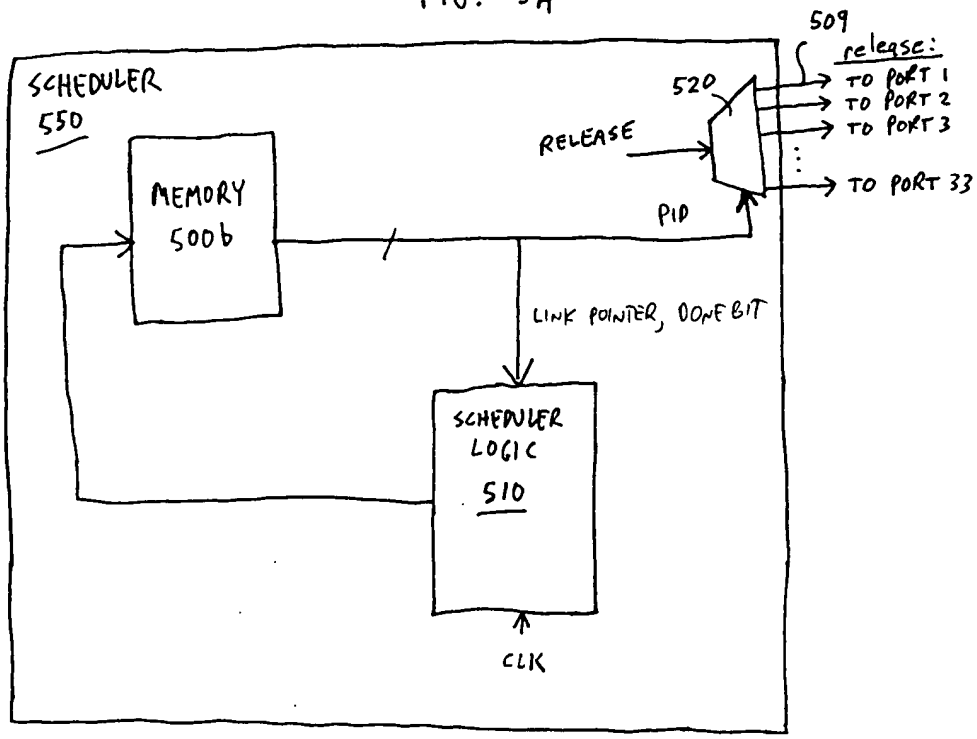

SCHEDULER
550
MEMORY
500b
509
release:
520
RELEASE
PID
TO PORT 1
TO PORT 2
TO PORT 3
TO PORT 33
LINK POINTER, DONE BIT
SCHEDULER LOGIC
510
CLK

FIG. 5B

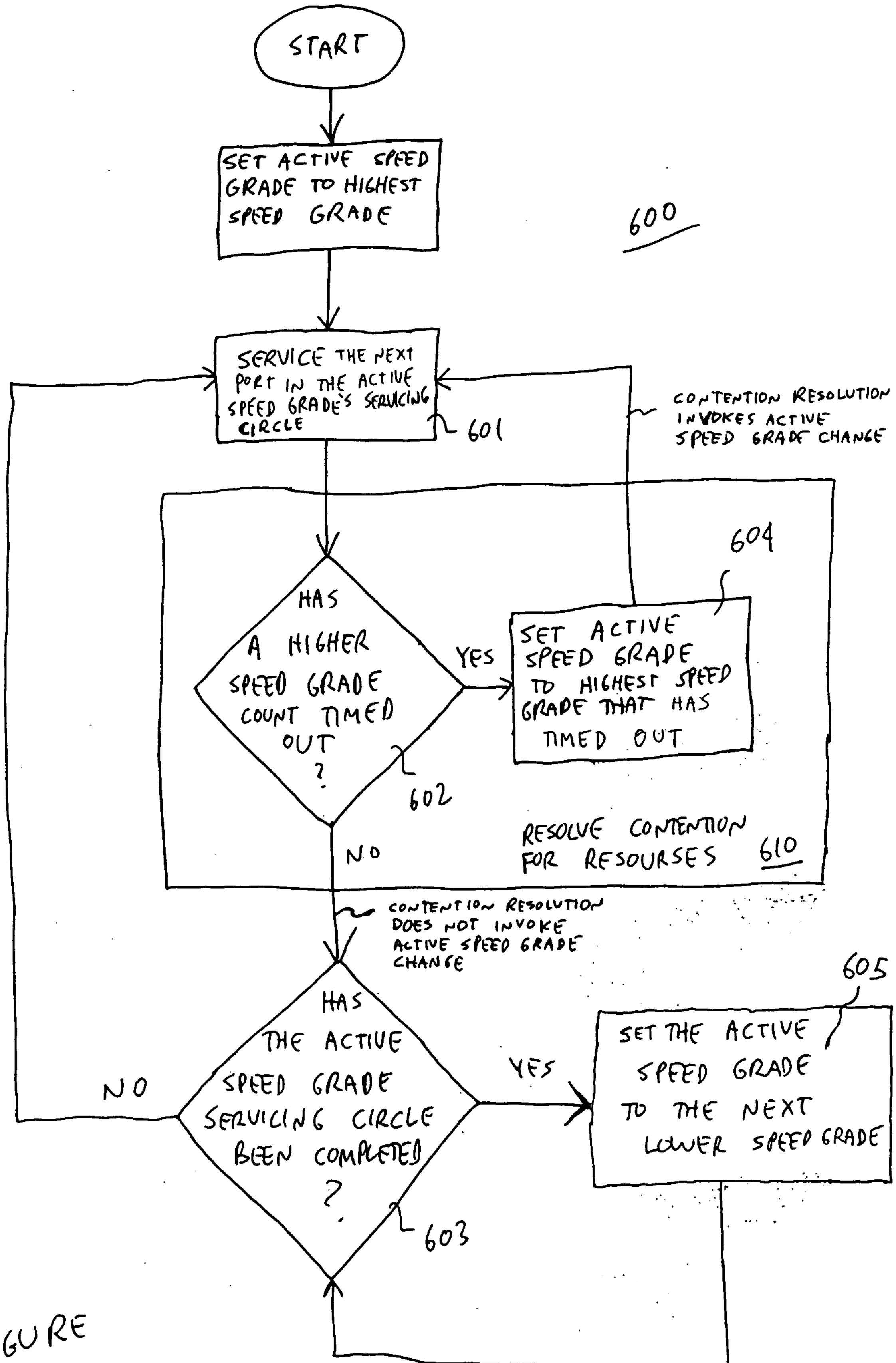

START
SET ACTIVE SPEED GRADE TO HIGHEST SPEED GRADE
600
SERVICE THE NEXT PORT IN THE ACTIVE SPEED GRADE'S SERVICING CIRCLE
601
CONTENTION RESOLUTION INVOKES ACTIVE SPEED GRADE CHANGE
604
HAS A HIGHER SPEED GRADE COUNT TIMED OUT ?
YES
SET ACTIVE SPEED GRADE TO HIGHEST SPEED GRADE THAT HAS TIMED OUT
602
RESOLVE CONTENTION FOR RESOURSES
610
NO
CONTENTION RESOLUTION DOES NOT INVOKE ACTIVE SPEED GRADE CHANGE
605
HAS THE ACTIVE SPEED GRADE SERVICING CIRCLE BEEN COMPLETED ?
NO
YES
SET THE ACTIVE SPEED GRADE TO THE NEXT LOWER SPEED GRADE
603

FIGURE 6

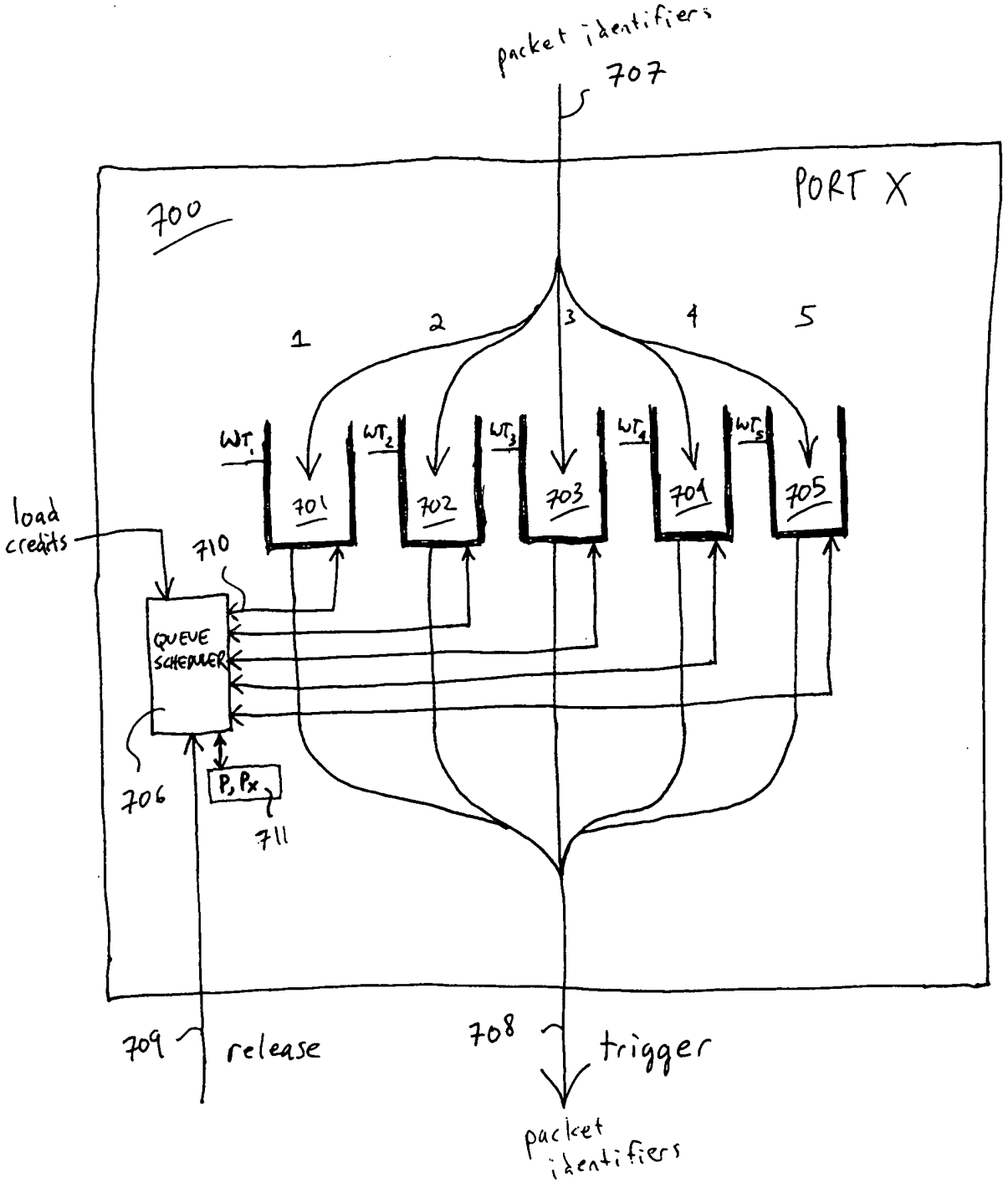
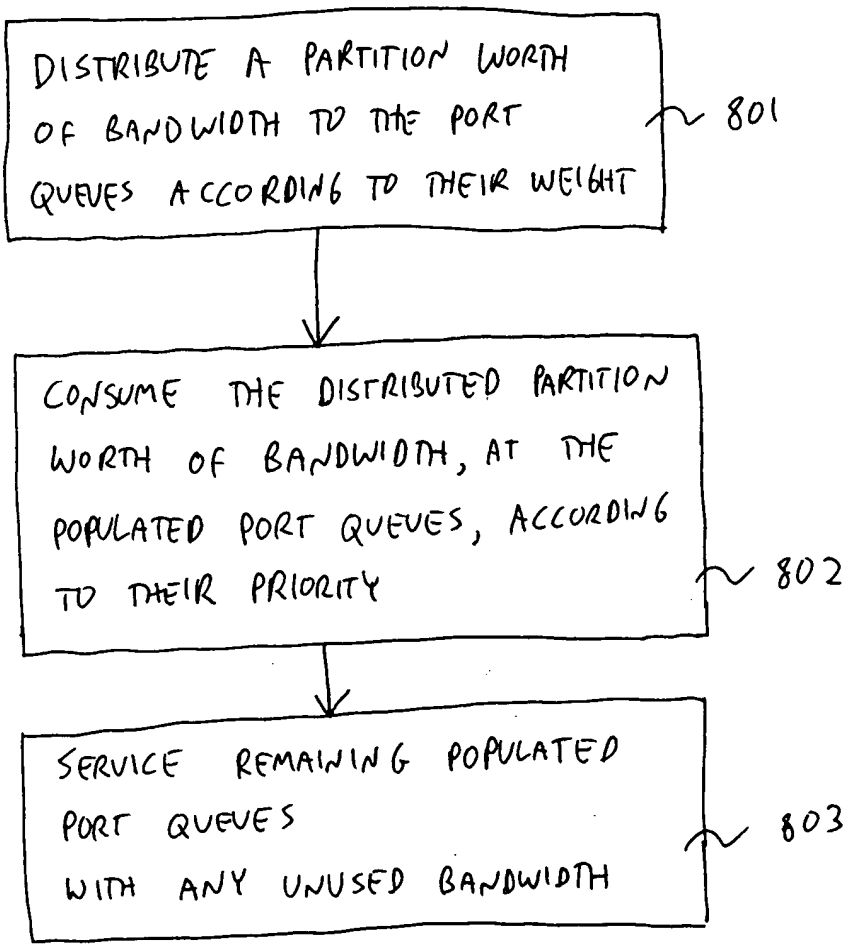

packet identifiers
707
PORT X
700
1
2
3
4
5
WT1
WT2
WT3
WT4
WT5
701
702
703
704
705
load credits
710
QUEUE SCHEDULER
706
P, Px
711
709
release
708
trigger
packet identifiers

FIGURE 7


DISTRIBUTE A PARTITION WORTH OF BANDWIDTH TO THE PORT QUEUES ACCORDING TO THEIR WEIGHT
801
CONSUME THE DISTRIBUTED PARTITION WORTH OF BANDWIDTH, AT THE POPULATED PORT QUEUES, ACCORDING TO THEIR PRIORITY
802
SERVICE REMAINING POPULATED PORT QUEUES WITH ANY UNUSED BANDWIDTH
803

800

FIGURE 8

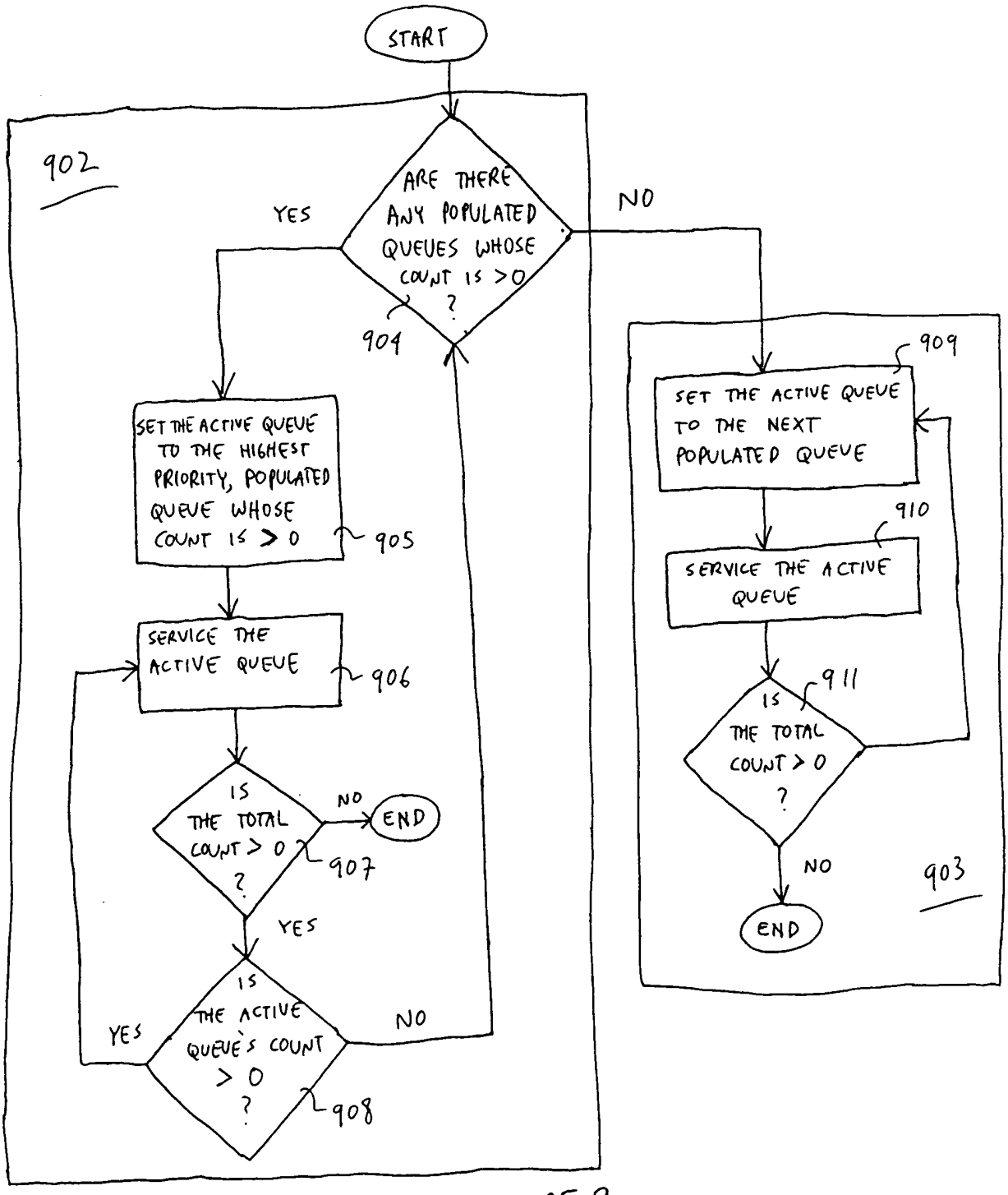

START
902
ARE THERE ANY POPULATED QUEUES WHOSE COUNT IS >0 ?
904
YES
NO
SET THE ACTIVE QUEUE TO THE HIGHEST PRIORITY, POPULATED QUEUE WHOSE COUNT IS > 0
905
SERVICE THE ACTIVE QUEUE
906
IS THE TOTAL COUNT > 0 ?
907
NO
END
YES
IS THE ACTIVE QUEUE'S COUNT > 0 ?
908
YES
NO
909
SET THE ACTIVE QUEUE TO THE NEXT POPULATED QUEUE
910
SERVICE THE ACTIVE QUEUE
911
IS THE TOTAL COUNT > 0 ?
NO
END
903

FIGURE 9